





Course Specifications

Course Title:	Calculus 2
Course Code:	282MATH-3
Program:	Information Systems
Department:	Information Systems
College:	College of Computer Science and Information Systems
Institution:	Najran University





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A. Course Identification

1. Credit hours:
2. Course type
a. University College Department × Others
b. Required × Elective
3. Level/year at which this course is offered: Thir
4. Pre-requisites for this course (if any):
5. Co-requisites for this course (if any): N/A

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	45	100%
2	Blended		
3	E-learning		
4	Correspondence		
5	Other		

7. Actual Learning Hours (based on academic semester)

No	Activity	Learning Hours
Conta	ct Hours	
1	Lecture	45
2	Laboratory/Studio	
3	Tutorial	10
4	Others (specify)	
	Total	55
Other Learning Hours*		
1	Study	30
2	Assignments	10
3	Library	10
4	Projects/Research Essays/Theses	
5	Others (specify)	10
	Total	155

* The length of time that a learner takes to complete learning activities that lead to achievement of course learning outcomes, such as study time, homework assignments, projects, preparing presentations, library times

B. Course Objectives and Learning Outcomes



2. Course Main Objective

The main objectives of the course is to familiarize the students with the essential concepts and the solutions of the series and integrals.

3. Course Learning Outcomes

	CLOs	Aligned PLOs
1	Knowledge:	
1.1	Define the basic concepts about series and integrals.	
1.2	Describe appropriate information for applying series and integral in various scientific fields.	
1.3		
2	Skills:	
2.1	Recognize the suitable technique for finding the solution of integral.	
2.2	Create the nth terms for sequences and series.	
2.3		
3	Competence:	
3.1	Promoting free, creative and critical thinking.	
3.2	Working independently.	
3.3	Searching for data and information and analyzing them.	

C. Course Content

No	List of Topics	Contact Hours
1	Infinite Sequences	3
2	Infinite series Convergence and divergence of infinite series Integral test Ratio test Root test Comparison test. Conditional convergence and absolute convergence. Alternating series test. Power Series Taylor and Maclaurin series 	10
3	 Approximate area and Riemann Sums The definite integrals properties of the definite integrals Main value theorem for definite integral Antiderivatives and the indefinite integrals The Fundamental Theorems of Calculus Indefinite integrals and the substitution rule Integrals of exponential functions 	5

	Integrals of logarithmic functions	
	• Integrals of trigonometric and Hyperbolic functions	
	• Integral involving the inverse of trigonometric and Hyperbolic	
	functions	
5	Integration techniques:	
	• integration by parts,	
	• trigonometric integrals,	
	• trigonometric substitution,	11
	Integrals involving roots,	
	• Integrals involving quadratic functions,	
	• Integrals involving rational functions (Partial fractions),	
	Different substitutions	
	Numerical integration:	2
	• Trapezoidal rule,	2
	Improper integrals	2
	Application of the definite integrals:	4
	Areas, Volumes	t
	Total	45

D. Teaching and Assessment

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	Knowledge		
1.1	Define the basic concepts about series and integrals	Class motivations and discussions	Homework assignments
1.2	Describe appropriate information for applying series and integral in various scientific fields.	Solved problems method	CollaborativelearningandTeamwork
2.0	Skills		
2.1	Recognize the suitable technique for finding the solution of integral.	Class discussions	Training reports, Quizzes
2.2	Create the nth terms for sequences and series.	Class discussions	Training reports, Quizzes
3.0	Competence		
3.1	Promoting free, creative and critical thinking.		
3.2	Working independently.		
3.3	Searching for data and information and analyzing them.		

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Assignment 1	3	A Les
2	Assignment 2	4	
3	Assignment 3	5	inviacety .
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#	Assessment task*	Week Due	Percentage of Total Assessment Score
4	Assignment 4	6	
5	Assignment 5	8	
6	Assignment 6	9	
7	Assignment 7	10	
8	Assignment 8	11	

*Assessment task (i.e., written test, oral test, oral presentation, group project, essay, etc.)

E. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice:

Available at office hours per week and reachable via email and Blackboard

F. Learning Resources and Facilities

1.Learning Resources

1. Dear ming Rebour eeb	
Required Textbooks	
Essential References Materials	Earl W. Swokowski: Calculus: The Classic Edition
Electronic Materials	https://www.youtube.com/channel/UClAxySW9cKpnItjf- 4fMZhA/feed
Other Learning Materials	https://www.youtube.com/channel/UClAxySW9cKpnItjf- 4fMZhA/feed

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	 Classrooms number of seats = 20 seat Computer rooms containing at most 21 PCs Rooms equipped with modern teaching techniques and different display devices.
Technology Resources (AV, data show, Smart Board, software, etc.)	Data show, Smart Board.
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	No need





G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Effectiveness of teaching	Students	Electronic Evaluations
Extent of achievement of course learning outcomes	Faculty Members	Analysis work by Microsoft- Excel
Quality of learning resources	Students, Faculty Members	Questionnaires

Evaluation areas (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)

Evaluators (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify) Assessment Methods (Direct, Indirect)

H. Specification Approval Data

Council / Committee	Department Council
Reference No.	Session No. 10 (441-38-43300)
Date	17/02/2020



